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EXAMINER
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ROY, SIKHA

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 01/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/840,290

Applicant(s)

KANG ET AL.

Examiner

Sikha Roy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 April 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) \_\_\_\_\_ is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13, 15-28 and 37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 April 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.                      6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

Applicants' election without traverse of Group I, claims 1-13,15-28 and 37 in Paper # 7 is acknowledged.

Claims 14 and 29-36 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a non-elected Group II, there being no allowable generic or linking claim.

### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the gas removal channel defined by non-light emitting zone filling portion and the first dielectric layer as claimed in claim 23 must be shown or the feature canceled from the claim. No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Specification***

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### ***Claim Objections***

Claim 27 is objected to because of the following informalities:

In claim 27 'claim 23' should be replaced by --claim 24-- as seal is mentioned in claim 24 and not in claim 23.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 2 the limitation comprising 'non-light emitting filling portion are substantially formed integrally' is indefinite as it fails to clarify how integrally the filling portion is formed and ascertain the scope of the claim and thereby renders the claim indefinite.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United

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States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 1,4,7, 15 –18 and 28 are rejected under 35 U.S.C. 102(e) as being anticipated by U. S. Patent 6,414,434 to Nakano et al.

Referring to claim 1 Nakano et al. disclose (column 3 lines 1-36, Fig.1) a plasma display panel comprising a front glass substrate 1 and a rear glass substrate 3 coupled to each other by a sealing material 10 coated at edges of the front and rear glass substrates, first electrodes (X,Y) and second electrodes 4 on opposing inner surfaces of the front and rear glass substrates so as to cross each other, dielectric layers 2 and 5 on opposing inner surfaces of the front and rear glass substrates so as to cover first and second electrodes, partitions 6 formed on the upper surface of the dielectric layer 5 of the rear glass substrate, fluorescent material layers of three colors red, green and blue coated between adjacent partitions and a non-light emitting zone filling portion (second partition wall) 11 filling a non-light emitting zone defined between the outermost partitions and the sealing material 10. Nakano et al. disclose that the (second partition wall) non-light emitting zone filling portion is made of the same low-melting point glass material as that of the partition walls 6.

Regarding claim 4 it is evident from Fig. 1 the non-light emitting filling zone portion covers the end portion of the first electrodes X,Y formed on the front glass substrate 1.

Regarding claim 7 Nakano et al. disclose all the limitations which are same as that of claim 1 and also an empty space defined between the sealing material 10 and

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non-light emitting zone filling portion 11, the non-light emitting zone filling portion surrounds the display area covering the end portions of the first electrodes.

Claim 15 recites the same limitation as of claim 1 and hence is rejected for the same reason. The recitation of 'to prevent a discharge of the first electrodes in a space between the outermost partition and the seal' has not given patentable weight as it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from the prior art apparatus satisfying the claimed structural limitations.

Regarding claim 16 Nakano et al. disclose that the (second partition wall) non-light emitting zone filling portion is made of the same low-melting point glass material as that of the partition walls 6.

Regarding claims 17 and 18 Nakano et al. disclose in the Fig. 1 that the non-light emitting zone filling portion (second partition wall) 11 has the same height as that of the outermost partition and it fills the space between the outermost partition and the seal.

Regarding claim 28 Nakano et al. disclose (claim 3 line 53) inert gas disposed within the plasma display panel.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 3, 5, 6, 8-13, 19-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent 6,414,434 to Nakano et al.

Nakano et al. disclose the claimed invention except for the outermost partition and the non-light emitting zone filling portion formed integrally. It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the outermost partition and the non-light emitting zone filling portion integrally, since it has been held that forming in one piece an article which was been formed in two pieces and put together involves only routine skill in the art.

Referring to claim 3 Nakano et al. disclose (column 4 lines 25-32) the frit glass forming the sealing layer 10 is applied to the outer side of the non-light emitting filling zone (second partition wall) portion 11. Hence it would have been obvious to one of ordinary skill in the art to modify the space between the sealing material and the outermost partition filled completely with the non-light emitting filling zone when the latter is formed integrally with the partition wall.

Regarding claim 5 Nakano et al. disclose (column 3 lines 48-51) a gas exhaust hole provided in back-side glass substrate and in the non-display area between the sealing layer and the second partition wall 11. It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the gas exhaust hole at the upper surface of the second partition wall since it has been held that rearranging parts of an invention involves only routine skill in the art.

Regarding claim 6, Nakano et al. disclose the claimed invention except for the limitation of the depth of the gas hole being in the range of 10 micrometer through 160

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micrometer. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the depth of the exhaust hole within a range of  $10\mu\text{m}$  through  $160\mu\text{m}$ , since optimization of workable ranges is considered within the skill of the art.

Regarding claims 8 and 9 Nakano et al. disclose in Fig. 1 that the non-light emitting zone filling portion covers the end of the first electrodes which extend past the outermost partition. Nakano et al. do not disclose that the width of the non-light emitting zone filling portion being equal to (claim 8) or greater than (claim 9) the length of the end portions of the first electrodes.

Regarding claim 8 it would have been obvious to one of ordinary skill in the art at the time of invention to select the width of the non-light emitting zone filling portion to be equal to the length of the end portions of the first electrodes so that the non-light emitting zone filling portion covers the end portions of the first electrodes.

Regarding claim 9 it would have been obvious to one of ordinary skill in the art at the time of invention to select the width of the non-light emitting zone filling portion to be greater than the length of the end portions of the first electrodes so that the non-light emitting zone filling portion covers the end portions of the first electrodes.

Regarding claim 10, Nakano et al. disclose the claimed invention except for the limitation of sum of the widths of the non-light emitting zone filling portion and the



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outermost partition being 1.0 mm and length of the end portion of the first electrode covered by the outermost partition and non-light emitting zone filling portion being 0.3 mm . It has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. Thus, it would have been obvious to one of ordinary skills in the art at the time the invention was made to have the sum of the widths of the non-light emitting zone filling portion and the outermost partition 1.0 mm and length of the end portion of the first electrode covered by the outermost partition and non-light emitting zone filling portion 0.3 mm, since discovering an optimum value of a result variable is considered within the skills of the art.

Regarding claim 11 Nakano et al. disclose the claimed invention except for the limitation of the width of the empty space being less than  $50\mu\text{m}$  when the first electrodes extend past the non-light emitting zone filling portion. It has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. Thus, it would have been obvious to one of ordinary skills in the art at the time the invention was made to have the width of the empty space less than  $50\mu\text{m}$  when the first electrodes extend past the non-light emitting zone filling portion.

Claims 12 and 13 recite the same limitations as of claims 5 and 6 respectively and hence are rejected for the same reasons (see rejection of claims 5 and 6).

Regarding claim 19 a plasma display panel intrinsically has each of the first electrodes comprising of a terminal extending to the seal for outside electrical connection and a non-terminal end that does not extend to the seal (as is evidenced by U. S. Patent 5,909,261 to Seki et al. in Fig. 4). It is elementary that mere recitation of a

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newly discovered function or property, intrinsically possessed by things in the prior art, does not cause a claim drawn to distinguish over the prior art. Additionally, where the Patent Office has reason to believe that a functional limitation asserted to be critical for establishing novelty in the claimed subject matter may, in fact, be an intrinsic characteristic of the prior art, it possesses the authority to require the applicant to prove that the subject matter shown to be in the prior art does not possess the characteristic relied on. Thus, the functional limitation of terminal end extending to the seal and non-terminal end not extending to the seal is taught by Nakano et al. under intrinsic functional principles. Furthermore the non-light emitting zone filling portion and the outermost partition being outside the discharge area obviously covers the non-terminal end of the first electrodes.

Claim 20 essentially recites the same limitation as of claim 11 and hence is rejected for the same reason (see rejection of claim 11).

Regarding claims 21 and 22 Nakano et al. disclose the non-terminal end of the first electrodes not extending to the seal and covered by the non-light emitting zone filling portion and the outermost partitions and hence it would have been obvious to one of ordinary skill in the art at the time of invention to specify the two possible choices –i) non-terminal end past the outermost partition and not through the non-light emitting zone filling portion and ii) non-terminal end past through the outermost partition and the non-light emitting filling zone portion for preventing mis-discharge since it is known in the art that the first electrodes extend past the discharge area and the partitions contribute to the prevention of mis-discharges.

Regarding claim 23 Nakano et al. disclose the claimed invention except for the gas removal channel defined by the non-light emitting zone filling portion and the first dielectric layer. It would have been obvious matter of design choice to have the gas removal channel defined by the non-light emitting zone filling portion and the first dielectric layer since the applicants have not disclosed that this design is for any particular purpose and it appears that the invention would perform equally well with gas exhaust and encapsulating hole as disclosed by Nakano et al.

Claim 24 essentially recites the same limitation as of claim 5 and hence is rejected for the same reason (see rejection of claim 5).

Regarding claims 25 and 26 Nakano et al. disclose the claimed invention except for the gas removal channel (10 mm) defined by one half of the space (20 mm) between the outermost partition and the seal. It would have been obvious matter of design choice to have the gas removal channel defined by one half of the space between the outermost partition and the seal since the applicants have not disclosed that this design is for any particular purpose and it appears that the invention would perform equally well with gas exhaust and encapsulating hole as disclosed by Nakano et al.

Regarding claim 27, Nakano et al. disclose the claimed invention except for the limitation of another gas removal channel. It has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. It would have been obvious to one having ordinary skill in the art at the time the invention was made to include another gas removal channel for better gas removal, since mere duplication of essential parts of the invention is considered within the skill of the art.

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Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent 6,414,434 to Nakano et al. in view of U. S. Patent U. S. Patent 6,242,859 to Betsui et al.

Betsui et al. in analogous art of plasma display panel disclose (Figs. 10,13(i) column 13 lines 10-55) a plasma display panel comprising a front glass substrate 10 having first electrodes 11,12 over which first dielectric layer 42 is formed, a rear glass substrate 20 disposed opposite the front glass substrate having second electrodes over which second dielectric layer 22 is formed, the partitions (ribs) 23 formed on the upper surface of the second dielectric layer, the outermost partitions 40(spacer having same thickness as ribs 23 and made of the same low-melting-point glass paste as the ribs) extending to the seal 25. It is further noted that this design of the outermost partition extending to the seal prevents distortion and fracturing or damaging of the upper dielectric film (micro-sheet 30) in the process of sealing and also eliminates spaces preventing arc discharges (column 13 lines 57-64).

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to modify the outermost partition of Nakano et al. extend to the seal as suggested by Betsui et al. for preventing distortion and fracturing or damaging of the upper dielectric film (micro-sheet 30) in the process of sealing and eliminating spaces between the first and second substrates and hence preventing arc discharges.

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### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references are cited to further show the state of the art with respect to plasma display panel with seal bonding member.

U. S. Patent 5,754,003 to Murai et al.

U. S. Patent 6,285,128 to Amemiya.

U. S. Patent 6,313,579 to Nakano et al.

### ***Contact Information***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikha Roy whose telephone number is (703) 308-2826. The examiner can normally be reached on Monday-Friday 8:00 a.m. – 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (703) 305-4794. The fax phone number for the organization is (703) 308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

S.R.

Sikha Roy  
Patent Examiner  
Art Unit 2879

  
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